

REMARKS

Claims 1-2 and 4-16 remain pending in the application, with claim 14 having been previously withdrawn from consideration. By way of the present response, claim 1 has been amended without introduction of new matter. Favorable reconsideration and allowance are respectfully requested in view of the above amendments and the remarks advance below.

In the most recent Office Action, the Office maintains the rejection of claim 1, and newly rejects claim 16 under 35 U.S.C. § 102(b) as allegedly being anticipated by Aoyama et al. (U.S. Patent No. 5,517,685). However, independent claim 1 is amended to recite *inter alia* “a signal path between the second terminal and the mixing means comprises a high pass filter, and the feedback circuit comprises a low pass filter that provides a linearizing effect on an output of the second signal.” Support for these features can be found, for example, at least in Figure 2, lines 28-34 of page 7, and lines 5-17 of page 9 of Applicants’ disclosure. The Aoyama et al. does not describe these claimed features. Accordingly, the Aoyama et al. patent does not anticipate the passive mixer recited in independent claim 1, and thus also the features recited in dependent claim 16. It is therefore respectfully requested that the Office withdraw the rejection of claims 1 and 16 under Section 102(b).

Starting on page 5, the Action maintains the rejection of claims 1, 2, 5-7, and 9, and newly rejects claim 16 under 35 U.S.C. § 102(b) as allegedly being anticipated by Hoover (U.S. Patent No. 4,090,139). With respect to independent claim 1, Applicants respectfully traverse this rejection at least for the reasons set forth on pages 6 and 7 of the reply filed on 23 June 2008, and further for the following reasons:

As pointed out at the top of page 7 of the Applicants’ 23 June 2008 response, the Hoover patent does not appear to describe a passive mixer. The Office contends, in the sentence spanning pages 3 to 4 of the Action, “FETs all quiescently conduct to operate in their linear region (column 2, lines 25-48), it is clear that the FETs provide no signal gains during mixing, thus the mixer is considered a passive mixer.” However, a passive mixer, as claimed, works like switch in which the transistor is switched on and off by the LO signal input to the gate of the transistor, the signal to be converted is input at the drain/source of the transistor and the converted signal is output at the another source/drain of the transistor. The transistors in the passive mixer are not biased, and thus transistors in the passive mixer do *not* quiescently conduct.

In an active mixer, by contrast, the signal to be converted is input at the gate of a transistor that is biased to operate at the linear region. For instance, Fig.1 of the Hoover patent depicts a COS/MOS pair N2/P2 in which the output current from a source/drain of these transistors are respectively input to the drain/source of another COS/MOS pair N1/P1, and the gates of the transistors N1/P1 are controlled by the LO signal, $E_{IN1} = f_1$. Because all the transistors in Hoover are biased to quiescently conduct (see, column 2, lines 28-39), the mixer in Hoover *is* an active mixer.

For at least these reasons, the Hoover patent does not describe Applicants' claimed "passive mixer," much less the combination including "a signal path between the second terminal and the mixing means comprises a high pass filter, and the feedback circuit comprises a low pass filter that provides a linearizing effect on an output of the second signal," as defined by independent claim 1.

For at least the foregoing reasons, the subject matter defined by independent claim 1 as well as that defined by any of the dependent claims 2, 5-7, 9 and 16, is patentably distinguishable over that which is shown by Hoover. It is therefore respectfully requested that the rejection of these claims under Section 102(b) be withdrawn.

Claims 4 and 15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hoover in view of Geddes et al. (U.S. Patent No. 5,263,198). However, claims 4 and 15 each depend from claim 1, and thus these claims patentably distinguish over any combination of Hoover and Geddes et al. at least because that combination fails to disclose each and every claimed feature.

As pointed out above, the Hoover patent fails to disclose the combination of features recited in claim 1 that comprises a "passive mixer" including "a signal path between the second terminal and the mixing means comprises a high pass filter, and the feedback circuit comprises a low pass filter that provides a linearizing effect on an output of the second signal." The Geddes et al. patent does not make up for the deficiencies of Hoover because the its relied-upon disclosure of a DC-blocking capacitor 80 in the LO-path, as discussed by the Office on page 8 of the Action, fails to show, suggest or otherwise render these claims obvious all of the features defined by independent claim 1, and thus also by dependent claims 4 and 15. Accordingly, this rejection should be withdrawn.

The Office also maintains the rejection of claims 8 and 10-13 under 35 U.S.C. § 103(a) as allegedly being obvious over Hoover. However, claims 8 and 10-13 variously depend from independent claim 1, and are therefore patentably distinguishable over the subject matter shown by the Hoover patent for at least the reasons set forth above with respect to claim 1, namely that Hoover fails to disclose or even suggest Applicants' claimed "passive mixer" including "a signal path between the second terminal and the mixing means comprises a high pass filter, and the feedback circuit comprises a low pass filter that provides a linearizing effect on an output of the second signal." Accordingly, the rejection of claims 8 and 10-13 under Section 103(a) should be withdrawn.

Based on the foregoing, this application is considered allowable. Prompt notification of same is requested.

Respectfully submitted,
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